Questions from Stormwater Group Meeting of June 25, 2003
With Responses from DEP Staff

Questions and responses concerning terms

1. **Will DEP keep the provision in that results in a stream watershed being considered sensitive/threatened for purposes of a Site Law development?** The stream standards and criteria may significantly change, which may or may not affect these provisions. We are early in the discussion of standards and criteria, and it is not possible yet to answer the question.

2. **What is a "sensitive or threatened region"?** This is a phrase used but not defined in the Stormwater Management Law. The Department can define the phrase in rules. The full phrase is "sensitive or threatened regions or watersheds". The phrase is helpful, because it gives the Department leeway to designate an area that may not line up with the outline of a particular watershed. For example, in the current rule, the portion of a watershed draining to a waterbody within 2 miles upstream of a public water supply intake is a "sensitive or threatened region or watershed". Only parts of these watersheds are designated as "sensitive or threatened regions or watersheds".

3. **If a water body is classified as GPA (great pond) and water is not meeting water quality standards, is it "impaired" or "most at risk"?** It is likely to be both. "Impaired waters" are a subset of "most at risk" waters. "Impaired waters" are already not meeting water quality standards. "Most at risk" waters include impaired waters, but also include additional waters at risk of not meeting water quality standards unless steps are taken to prevent further expected degradation of water quality.

4. **Are "most at risk" and "sensitive/threatened" federal terms?** No. These terms were established by the Maine State Legislature in 1997 as part of the Maine Stormwater Management Law. They are used in Department rules adopted pursuant to this law.

5. **How will this effort affect the Maine Construction General Permit (MCGP)?** The Department has not determined whether it will reissue the MCGP, or amend it prior to re-issuance, to reflect the effort here. This will need to be decided before July 2004.

6. **What is the federal mandate DEP is addressing? Is the stakeholder group convened because State law saws DEP has to identify "most at risk" and "sensitive/threatened" waters?** The Department is required by state law to identify and set standards for projects of certain sizes within the direct watersheds of "most at risk" waters and within sensitive/threatened" watersheds. The Department did this for lakes and coastal areas in 1997, and a very small number of public drinking water supply streams. A stakeholder process was used, and the lists and standards were approved by the Legislature as major substantive rules. Streams were not addressed because (1) the stakeholder group ran out of time; and (2) the Department felt that further data/information was needed to adequately identify the streams. A provision was put in the rules requiring the Department to update the list of rivers, streams, and brooks by July 1, 1998. The Department delayed this rulemaking until sufficient data was gathered to appropriately identify these streams. This data is now available.

It should also be noted that under Maine law, a person may not directly or indirectly discharge pollutants to a waterbody without a license. See 38 MRSA 413. Under both State and federal law, a person may not cause or contribute to a violation of water quality standards. The Department which administers these State laws, and the applicable delegated federal program, needs to establish standards for stormwater runoff so that the runoff will not cause or contribute to violations of water quality standards. Under State and federal law, the Department needs to address discharges to impaired waters, which are already not meeting water quality standards, with the goal of restoring the waters.

Questions concerning quantity standards

Note: a few people commented that they agreed with the approach of the new standards, then went on to raise particular questions or concerns. The comments agreeing with the approach were not recorded.

7. **What information indicates problems with the current approach?** Please see "Runoff Quantity: Progressing beyond Control of Peak Flow Rates" available at: http://www.state.me.us/dep/blwq/docstand/stormwater/group.htm

8. **How can the public know that DEP won't want to change the quantity or quality standards again in 3 years, since department staff now wants to change the one established in 1997?** The department recognizes that frequent changes in rules can lead to confusion and non-compliance issues for the regulated public. Department staff does not expect to propose rule changes on a frequent basis for that reason. However, no one can guarantee that a standard will never change. The area of stormwater control is a very rapidly developing area, with best management practices now routinely available to developers that were not available 5 years ago. Also, the impacts of polluted runoff on protected natural resources are better studied and understood each year. The quantity standard proposed will provide better stream protection in most cases than the current standard, which has remain largely unchanged since the 1980s.

9. **Why is DEP saying the peak flow standard is not working when it has been the standard since the 1980s? This is a standard with which everyone is already familiar.** There is a cost to changing a standard with which many people are already familiar. However, engineers in this field have been aware for many years of the problems with the peak flow standard. Until now, the Department staff did not have an alternative to suggest. As mentioned previously, stormwater control is a rapidly developing field, nationally and internationally. Neither standard (existing or proposed) should be expected to be perfect for every situation, but the proposed standard has advantages that make it worth considering at this time. The peak flow standard is essentially an old public works standard. It was designed to prevent flooding and to move water along quickly. It was not designed to prevent damage to streams -- it does not prevent channel erosion, undermining of banks, damage to habitat, etc. associated with the increased volume of runoff coming from developed sites. The peak flow standard is not preventing the degradation of Maine's streams due to runoff from urbanizing areas. For more information, see "Runoff Quantity: Progressing beyond Control of Peak Flow Rates".

10. **What will it cost for developers to meet the proposed standard?** Department engineering staff predict that detention basins built to control runoff from small developments that would need to meet just the stream protection standards would be slightly smaller than those currently built to meet the peak flow standard. Detention basins built to control runoff from

large developments having to meet both the stream protection and stream flooding standards would be slightly larger in size than needed to meet current requirements. The analysis required is very similar for both current and proposed standards. Costs to developers are not expected to be significantly different from the cost of complying with the existing standard.

11. **If DEP changes the quantity standard, and municipalities are still requiring developments to meet the old standards, how will the inconsistency be reconciled?** The standards are actually often different already, in that many municipalities require developers to address the 50- and 100-year storms in addition to the 2-, 10-, and 25-year storms required by the state. The adoption of the stream protection standard should not be problematic. The extended detention of runoff required by the stream protection standard could be done in the same stormwater management basin required by municipal peak flow standards. In most cases, this would result in slightly larger basins (10 – 20% more volume) than those currently being built.

12. **Does the proposal raise FEMA issues?** Department staff does not anticipate that there will be FEMA issues with the proposal, but will coordinate with the Maine Floodplain Management Program at the Maine State Planning Office.

13. **DEP should consider allowing all the water at the bottom of the watershed go without detention. Or, how about a rule of thirds, with detention not required in the lower third of the watershed?** The problem with this approach of "thirds" is that the lower third of one stream's watershed typically drains to the upper third of another. It may be possible to identify sections of rivers, streams, or brooks where detention of runoff would provide no benefit. For most streams and brooks, this would require measurements of flows and bank conditions along the entire watershed to identify those sections precisely. Department staff does not expect that the smaller brooks and streams would have any sections where detention would not be warranted. A single, large development is often enough to severely impact these small streams no matter where it is in the watershed.

14. **But shouldn't we really be modeling and monitoring these watersheds? How else we be sure we're allowing the appropriate stormwater flows?** Modeling and monitoring all the watersheds would provide useful information. However, this type of work would be both very expensive and time-consuming. The Department's current thinking is that it would not be reasonable to expect this level of resources to be available from the State or the development community in the foreseeable future. In the meantime, the Department believes that we can and should improve the quantity standard so that less damage is being done to Maine's streams.

15. **Could DEP put hydrographs on the website to help show how the different storms are covered by the new standard?** Department staff will provide these.

16. **In some situations, impacts might be worsened using the proposed standard.** The existing standard also worsens some situations. The proposed standard is expected to worsen fewer situations. Neither is perfect, but department staff expects the new standard to do a substantially better job protecting most streams.

17. **If DEP requires extended detention, how will that affect temperature and base flow? Won't holding flows exacerbate temperature problems?** Thermal impacts may become worse than under the current peak flow standard due to the increased detention times. Staff are investigating outlet designs that provide cooling of discharge waters. Some of these

designs are being implemented on projects recently licensed. One design has been monitored for two summer seasons to assess its ability to reduce the temperature of pond discharges.

18. **The SCS method tends to overestimate urban flow. If real flow is much less, the outlet doesn't adequately control it, and it goes straight through. Perhaps DEP should allow use of the rational method on urban sites and generally allow more flexibility in the methods allowed.** Unfortunately, hydrology models tend to be rather crude. Those that are more precise require significant gathering of site information and extensive calibration using rainfall data from many real storms. The department does not feel this modeling and calibration effort is a reasonable expectation of developers. Thus, the department has stuck with the SCS model – one with reasonable input requirements and level of acceptance. There is anecdotal evidence that the SCS model overestimates runoff rates for sites with large amounts of disconnected impervious area (e.g., residential subdivisions). This overestimation of flows does not mean flows aren't being controlled adequately – as the controls are sized based on predevelopment conditions which, in most cases, are modeled for wooded or field conditions (no disconnected impervious area). It does mean the ponds being built may be larger than necessary in some situations.

    The problem with using the rational method is that it does not provide enough information to adequately design ponds. The rational method gives only a single peak flow rate rather than a hydrograph (flow rate vs. time). Thus, the rational method is useful only in designing piped or channel systems where detention of flow does not occur, need not be considered, or is not required.

19. **There may be a conflict with statutory language that does not allow discharges of stormwater to GPA waters. There may be a conflict with the "direct discharge" language.** DEP staff does not believe a conflict exists. There used to be a flat prohibition on new direct discharges of pollutants to Class GPA waters. The language was amended in recent years to make an exception for stormwater discharges that are in compliance with state and local requirements. See 38 MRSA 465-A(C). Note that there is not a similar prohibition on new indirect discharges to GPA waters. However, under 38 MRSA 413, the direct and indirect discharge of pollutants to waters of the state is prohibited without prior licensing from the Department (unless otherwise exempt).

Questions and responses concerning quality standards

20. **Would credits be available for all projects?** Credits would be available for any projects that required Stormwater Treatment Level B or Level C. Credits would not be available for projects requiring only Level A.

21. **Is phosphorus removal important in stream watersheds?** Yes, though often not to the same degree as in sensitive lake watersheds. Eutrophication, usually expressed in streams as the covering of bottom and plant substrates with periphyton (attached algae), is the principal cause of diurnal dissolved oxygen depressions which can in turn be the primary reason for loss of sensitive fish and insect taxa. Phosphorus is one of, and probably the principal, nutrient controlling periphyton growth in streams.

22. **Concerning assigning value for BMPs -- when will the Department develop the list?** The Department expects to revise the Stormwater BMP Manual and put it on the web. A schedule for accomplishing this has not yet been established.

23. In the second table -- why is DEP using ranges? The department is trying to get away from the practice of assigning a particular BMP a very specific removal rate, like saying it will give 67% TSS removal.

24. Is DEP allowing design of BMPs to the bottom of the range? The range is intended to be used to help the Department to assign BMPs to one of three treatment levels. To assign a BMP a specific number like 67% makes it look like the BMP can always be expected to give that treatment level. We know that this is not correct. The literature on BMPs typically provides a range of treatment values in practice, for a BMP, depending upon a number of factors such as site conditions. Giving a range creates a standard that better lines up with what we actually expect to see happening on the ground.

25. Why can an applicant only go up a single level with credits? The Department's current thinking is that a large development in a most at risk or impaired watershed should do more quality control on-site than Level A (the lowest level). At Level A, little is required that would remove toxics or nutrients. If developments were to shift two levels, they would only be doing the lowest level of removal on site and would be doing less than might be required as retrofit of some existing development. Also, Level B BMPs are generally not highly difficult to achieve technically and financially.

26. Is DEP's proposed quality standard aimed at streams? Yes, the current effort is to create standards for streams. Eventually, the standards for lakes and coastal waters will need to be re-evaluated to determine if updates to those standards are warranted.

27. DEP defended the 80% standard in 1997, and said that the BMPs were not always appropriate for streams. What has changed? Are the BMPs appropriate for streams? The only place the 80% standard was proposed in 1997 (it was proposed by engineering consultants in the stakeholders group, not by the DEP) was as an alternative to the phosphorus allocation standard in lake most at risk watersheds. DEP staff did feel at that time that 80% TSS removal need not always be required in vulnerable stream watersheds, and the current proposal reflects that same feeling. BMP designs that will meet Stormwater Treatment Level B might, under some circumstances, provide 80% TSS removal on an annual basis, but will in most cases provide lesser removal and will be more likely equivalent to BMP designs that currently get credit for 70% to 75% removal. The only projects where the current proposal would require BMPs that could consistently be expected to remove 80% or more of the annual TSS load are the ones that would be required to meet Stormwater Treatment Level C. These are Site Law size projects in impaired watersheds where the department must be able to make a finding that the project does not cause or contribute to the impairment, and very large projects in most at risk and sensitive and threatened watersheds where, at least in small watersheds, a single project could dramatically affect the stream.

Our thinking has changed since 1997. We have a better understanding of urban stream conditions and of the factors that cause degradation. We proposed in 1997, for most at risk streams and for most Site Law projects in stream watersheds, as well as for most at risk coastal areas, the sliding scale TSS standard. Since we have not had any most at risk streams to regulate, this standard has only been applied to most at risk coastal areas and Site Law projects. The assumption, in 1997, was that the incentive to minimize impervious area that would result from application of the sliding scale would alter the nature and design of development enough to compensate for the fact that only a very low level of stormwater treatment was applied to some projects. What department staff has found instead is that the lots on which many projects are constructed happen to be significantly larger than the

intended design impervious area, so that they end up providing minimal removal of coarse sediment and virtually no removal of nutrients or metals. On lots that are relatively small compared to their initially intended impervious area, the attraction of a somewhat lower level of stormwater treatment is rarely a sufficient incentive to alter the intended layout of the project. The sliding scale is not functioning as intended, and is allowing a substantial amount of development to be constructed with less quality treatment than is needed to protect most at risk stream watersheds.

28. **How do the proposed standards tie into the statutory criteria for impaired waters.** The issue of how to prevent further degradation of impaired waters is not easy to address. If regulating new development is the only step taken in an impaired watershed, then prohibiting any additional discharge of pollutant, or requiring 100% TSS removal, would be the only way to ensure that the discharge does not cause or contribute to a water quality violation. Since this may not be feasible in some watersheds where future growth is desired, other options that entail managing discharges from existing sources; i.e., existing development, need to be explored.

29. **What does A, B, and C refer to?** These refer to treatment levels. Specific BMPs will be assigned to treatment levels, for example if they are expected to provide low, medium, or high treatment of runoff.

30. **It might be clearer if the levels were labeled "low, medium, or high"**. Agreed.

31. **How do the treatment levels reflect the concern with sensitive species?** They don't. Sensitive species may be considered when determining whether a waterbody is impaired (not meeting water quality standards). The Levels A, B, C are only treatment levels for BMPs -- they indicate whether a BMP is expected to provide low, medium, or high treatment.

32. **There will be cumulative impacts if DEP is not holding the smaller projects to the same standards as large projects.** There is a cumulative impact issue. However, there is also the reality that a developer of a small site can face a higher marginal cost, and more difficult technical issues, in providing good stormwater quality treatment. The Department is trying to recognize that reality in adjusting the standards.

    Sometimes with small sites, the impervious area may also be more broken up, which helps. And, it can sometimes be very difficult to include disconnected impervious area on a large site.

33. **Sometimes with a small project, like a 10-lot subdivision, it can be hard to even get 40% TSS removal. DEP should allow the use of wetlands for stormwater treatment, such as when BMPs are used in series and wetlands are the last stage.** The Department does not favor the use of natural wetlands for stormwater treatment as we are finding there are detrimental effects of discharging pollutants to wetlands.

34. **Disconnected impervious rates are different depending on whether the type of development proposed is commercial or residential.** While true, under the current Stormwater Management Law, single family residential lots are exempt.

    Clarification: under the Stormwater Management Law, "Impervious and disturbed areas associated with construction and expansion of *a single-family detached residence on a parcel* do not require review pursuant to this section." 38 MRSA 420-D(7)(E)(emphasis added). If

a person builds one home on a parcel it is not reviewed. If a developer sells out undeveloped lots they are not reviewed. But, if a developer builds more than one home on a parcel and sells them out, they are counted and reviewed. In the great majority of cases, the developer sells undeveloped lots, and they are not reviewed.

35. **Planners want compact development -- there is a tension between the concepts.** The concepts can work quite well together. In compact development, one often has less total impervious area, because of less roads. One can also choose to maximize infiltration. And, more area can remain undeveloped than would otherwise be the case.

36. **But many towns won't allow developers to do cluster housing, or build the "great American neighborhood."** That issue goes beyond what the department can address through its statutory authority, or this effort.

37. **The credits are not workable in growth areas.** Some credits, and we expect there will be more than have been identified to this point, may be *less* workable in growth areas, but there may be instances where they could be applied. In these growth areas, particularly in impaired watersheds, riparian restoration and detention retrofits may provide the only hope of stream recovery and will likely be indicated in a TMDL. Regulatory standards should include significant opportunities for new development to contribute to these efforts.

38. **The DEP proposal could drive growth to outlying areas. Urban streams at some point are really just a conveyance structure. Look at other parts of the country for ideas on credits; look at off-site credits.** Most of the development that will be regulated in the stream most at risk watersheds will be commercial development, which will be less likely to relocate away from the preferred location than residential development might.

    All streams in the state, urban or otherwise, are classified, by the legislature, as AA, A, B or C. Non of these classes allows a stream to function only as a conveyance structure, so the Department is not given the option of treating them as such. The Department will continue to investigate other alternatives for credits, and would be glad for any additional ideas in that regard. As far as off-site credits go, two of the three credits proposed would be available as off-site credits and would be most often used that way. Specific analysis of a stream's needs on a reach by reach basis, as would be performed in a TMDL on an impaired stream, could provide many other opportunities for specific off-site credits.

39. **Is this proposal really any different from the existing TSS standard?** Department staff believes the proposal is simpler than the TSS standard. People would have a menu of BMPs from which to choose that would allow them to meet the standard. The other big difference is that the proposal makes the level of required stormwater treatment a function of absolute project impervious area, rather than % impervious area as in the current sliding scale.

40. **Can a developer treat different parts of the parcel differently?** This is an outstanding issue yet to be resolved.

41. **Is 100% TSS removal on a river necessary?** Whether a stream or river, the department's current thinking is that the required amount of treatment should be variable based on both the size of the project, and the status of the down-gradient water body. From a practical standpoint, the draft proposal developed by department staff would probably not result in the necessity for more than 85% TSS removal, except in impaired waters. Even in impaired

waters, some treatment of stormwater from existing development may eliminate the need for higher treatment levels from new development.

42. **Is the process for selecting and defining values to BMPs changing?** Not from the applicant's perspective. From the Department's perspective -- staff will have to decide what level of treatment is appropriate for given BMP designs, rather than assigning a removal efficiency.

43. **If DEP assigned a number; wouldn't that be simpler? Ex. say 65% and explain that this means 60-75%?** The department would prefer to get away from requiring a specific number, or implying that any given BMP design can be expected to provide the same specific removal, regardless of the nature of the contributing watershed and the suite of storms being treated. We would be more comfortable with a relative rating: low, medium and high to describe the amount of needed treatment.

44. **DEP doesn't know how efficient the BMPs are under Maine conditions.** It is true that, for most BMPs, the amount of data on removal efficiencies is limited. We have to do the best we can with what is available. Very few BMPs have been monitored in Maine, though many have been studied in other cold climate areas.

45. **DEP should give people extra credit for data collection.** Good storm event data collection is not easy, nor is it inexpensive. It usually costs much more than the BMP being monitored, and it is hard to find qualified and willing entities to design and perform the collection and analysis.

46. **DEP should build in incentives for trying new things. Ex. try a grass parking lot -- Maryland has had problems trying to do this -- developers have not wanted to risk liability if something doesn't work.** It is important for us to be ready to consider new BMP ideas and designs, or modifications to standard designs. The infiltration credit would already provide a significant incentive for grassed overflow parking areas. In fact, the current sliding scale provides such an incentive.

47. **DEP should not assume that a development will worsen the runoff situation. I've seen situations improved. Can DEP build in recognition that it could be improved?** It has been suggested before that if a developer buys/starts with a developed area with very little treatment, and improves the situation, it should not be necessary to improve all the way to meeting current standards, because the developer is making a bad situation better. Improving a bad situation off-site may be appropriate for some kind of credit, and the department will consider this. Also, improving another location on the same parcel may be considered under the phosphorus method currently.

    For new development, department staff believes that applicants in most cases should be required to meet current standards. Note that this approach is consistent with existing practice in many other areas. For example, if a developer bought an old building that was a fire hazard, and razed it and built a new building, he/she would be expected to construct the new building to meet the current fire code, not some lesser standard because the existing building was removed. It is appropriate to meet current environmental standards when constructing a new building, as it is appropriate to meet other types of standards.

48. **I'm concerned that the proposed standard leaves too much discretion with the DEP, and so may be legally deficient. Perhaps it would be better to list the BMPs in the rule with**

an open-ended catchall like "and others if approved by the Department". Further consideration needs to be given to this.

49. DEP should encourage creativity and flexibility. It is important for us to be ready to consider new BMP ideas and designs, or modifications to standard designs.

50. DEP should also allow some credits for the "all other category" -- the current proposal doesn't seem to do that. It might be possible to preserve a stream bank area. Try to give people credit for doing the right thing. Most stream banks and immediate riparian areas are currently protected under either Shoreland Zoning (2nd order or larger) or the Natural Resources Protection Act (1st order). However, there may be cases where additional protection is warranted and that we should consider giving credit.

51. DEP should allow people to buy some credits (Winthrop Street Sweeper Example). The department's current thinking is that a credit program, as was utilized in Winthrop where a state of the art street sweeper was purchased using compensation fees, is a good approach and we should try to expand the program to include streams. The difficulty in accomplishing this will be to determine what an appropriate compensation rate should be for projects impacting streams. More work is needed to resolve this.

52. Will DEP try to drop the exemption for single-family homes? The Department has not yet decided whether to recommend that this exemption be dropped. However, staff agrees that it often doesn't make much sense to review the road but not the lots, in terms of potential impact on the resource. The staff also notes that the exemption is inconsistent with both the federal program and the Site law.

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